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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,695	01/26/2004	Mark I. Serdan	019023-9004-01	9175

26753 7590 05/05/2005

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EXAMINER

TORRES, ALICIA M

ART UNIT PAPER NUMBER

3671

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/764,695

Applicant(s)

SERDAN, MARK I.

Examiner

Alicia M Torres

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 5, 8-16 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,8-16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Objections

1. Claim 1 is objected to because of the following informalities: “begin” should be changed to –being—in line 16. Appropriate correction is required.

Claim 11 is objected to because of the following informalities: “the housing rotational movement” is unclear in line 10. Appropriate correction is required.

DETAILED ACTION

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4, 5, 8-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vandermeulen et al., hereafter Vandermeulen, in view of Scag.

4. Regarding claims 1, 4, 5 and 8-10, Vandermeulen discloses a spindle assembly for a lawnmower having a deck and a blade mounted for rotation with respect to the deck, the spindle assembly comprising:

a housing (20) defining an opening (44) and being connectable to the deck (45);

a spindle (15) at least partially disposed within the housing (20) and having an end extending through the opening (44) and beyond the housing (20), and being mounted for rotation with respect to the housing (20) about a rotational axis, the spindle (15) including a flange (35)

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extending radially outwardly from the end of the spindle (15) within the opening (44) and being spaced from the housing (20), the blade (at 30) being connectable to the flange (35);

at least one bearing (25) disposed within the housing (20) and connecting the spindle (15) to the housing (20) for rotational movement; and

a seal (40) disposed within the housing (20) between the opening (20) and the at least one bearing (25) to resist materials from passing from the opening (20) to the at least one bearing (25), as per claim 1.

However, Vandermeulen fails to disclose wherein the seal is a one-piece ring shaped member extending around the spindle and comprises a body made from a rigid material having an outer ring portion contacting the housing, an inner ring portion and a lip connected to the inner ring portion, the lip being formed from a flexible material molded around the body, wherein the lip is positioned to contact the spindle, as per claim 1; and

wherein the seal is fixed with respect to the housing and the spindle is rotatable with respect to the seal, as per claim 4; and

wherein the seal is connected to the housing with an interference fit, as per claim 5; and

wherein the body is entirely surrounded by the flexible rubber material, as per claim 8;

and

wherein the lip is bonded to the body, as per claim 9; and

wherein the lip includes two ring shaped portions spaced apart from one another and contacting the spindle, as per claim 10.

Scag discloses a similar spindle wherein the seal (75, 80) is a one-piece ring shaped member extending around the spindle (12) and comprises a body made from a rigid material (at

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80) having an outer ring portion contacting the housing (11), an inner ring portion (75) and a lip (76, 77) connected to the inner ring portion (75), the lip (76, 77) being formed from a flexible material molded around the body, wherein the lip (76, 77) is positioned to contact the spindle (12), as per claim 1; and

wherein the seal (75, 80) is fixed with respect to the housing (11) and the spindle (12) is rotatable with respect to the seal (75, 80), as per claim 4; and

wherein the seal (75, 80) is connected to the housing (11) with an interference fit, as per claim 5; and

wherein the body is entirely surrounded by the flexible rubber material, as per claim 8;

wherein the lip (76, 77) is bonded to the body (11), as per claim 9; and

wherein the lip (76, 77) includes two ring shaped portions spaced apart from one another and contacting the spindle (12), as per claim 10.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the seal of Scag on the spindle of Vandermeulen in order to prevent egress of lubricant from the housing.

5. Regarding claims 11-15, Vandermeulen discloses a spindle assembly for a lawnmower having a deck and a blade mounted for rotation with respect to the deck, the spindle assembly comprising:

a housing (20) defining an opening (44) and being connectable to the deck (45);

a spindle (15) at least partially disposed within the housing (20) and being mounted for rotation with respect to the housing (15) about a rotational axis,

at least one bearing (25) disposed within the housing (20) and connecting the spindle (15) to the housing (11) rotational movement; and

a seal (40) disposed within the housing (20), as per claim 11.

However, Vandermuelen fails to disclose a flange extending radially outwardly from the spindle within the opening and being spaced from the housing, the blade being connectable to the flange;

a seal disposed within the housing between the flange and the at least one bearing to resist materials from passing from the opening to the at least one bearing, the seal being a generally one-piece ring shaped member extending around the spindle comprising a body made from a rigid material and having an outer ring portion connected to the housing and an inner ring portion and a lip made from a flexible material and molded around the inner ring portion and the outer ring portion and contacting the spindle, the seal being fixed with respect to the housing and the spindle being rotatable with respect to the seal, as per claim 11; and

wherein the seal is connected to the housing with an interference fit, as per claim 12; and

wherein the body is entirely surrounded by a flexible rubber material, as per claim 13;

and

wherein the lip is bonded to the body, as per claim 14; and

wherein the lip includes two ring shaped portions spaced apart from one another and contacting the spindle, as per claim 15.

Scag discloses a similar spindle (12) including a flange (35) extending radially outwardly from the spindle (12) within the opening and being spaced from the housing (11), the blade (16) being connectable to the flange (35);

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a seal (75, 80) disposed within the housing (11) between the flange (35) and the at least one bearing (24) to resist materials from passing from the opening to the at least one bearing (24), the seal (75, 80) being a generally one-piece ring shaped member extending around the spindle (12) comprising a body made from a rigid material and having an outer ring portion (80) connected to the housing (11) and an inner ring portion (75) and a lip (76, 77) made from a flexible material and molded around the inner ring portion (75) and the outer ring portion (80) and contacting the spindle (12), the seal (75, 80) being fixed with respect to the housing (11) and the spindle (12) being rotatable with respect to the seal (75, 80), as per claim 11; and

wherein the seal (75, 80) is connected to the housing (11) with an interference fit, as per claim 12; and

wherein the lip (76, 77) is bonded to the body, as per claim 14; and

wherein the lip (76, 77) includes two ring shaped portions spaced apart from one another and contacting the spindle (12), as per claim 15.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the seal of Scag on the spindle of Vandermeulen in order to prevent egress of lubricant from the housing.

6. Regarding claims 16 and 18-20, Vandermeulen discloses a spindle assembly for a lawnmower having a deck and a blade mounted for rotation with respect to the deck, the spindle assembly comprising:

a housing (20) defining an opening (44) and being connectable to the deck (45);

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a spindle (15) at least partially disposed within the housing (20) and having an end extending through the opening (44) and beyond the housing (20), and being mounted for rotation with respect to the housing (20) about a rotational axis;

at least one bearing (25) disposed within the housing (20) and connecting the spindle (15) to the housing (20) for rotational movement; and

a one-piece sealing means (40) disposed between the opening (44) and the at least one bearing (25) for resisting materials from passing from the opening (44) to the at least one bearing (25), as per claim 16.

However, Vandermeulen fails to disclose wherein the sealing means includes a rigid support means connected to the housing and a flexible contacting means molded around the rigid support means and positioned for contacting the spindle, as per claim 16; and

Wherein the rigid support portion is fixed with respect to the housing and the spindle is rotatable with respect to the flexible contacting means, as per claim 18; and

Wherein the flexible contacting means includes two ring shaped portions spaced apart from one another and contacting the spindle, as per claim 19; and

Wherein the rigid support means is connected to the housing with an interference fit, as per claim 20.

Scag discloses a similar device wherein the sealing means includes a rigid support means (80) connected to the housing (11) and a flexible contacting means (75) molded around the rigid support means (80) and positioned for contacting the spindle (12), as per claim 16; and

Wherein the rigid support portion (80) is fixed with respect to the housing (11) and the spindle (12) is rotatable with respect to the flexible contacting means (75), as per claim 18; and

Wherein the flexible contacting means (75) includes two ring shaped portions (76, 77) spaced apart from one another and contacting the spindle (12), as per claim 19; and

Wherein the rigid support means (80) is connected to the housing (11) with an interference fit, as per claim 20.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the seal of Scag on the spindle of Vandermeulen in order to prevent egress of lubricant from the housing.

Response to Arguments

7. Regarding Applicant's arguments regarding the Scag '617 reference, Applicant asserts that Scag discloses two components, namely the bushing 36 and the spindle 12, to take the place of the one spindle in the claimed invention, however, the primary reference, Vandermeulen '455 in Figure 2, teaches that it is known in the art to have bearings and seals in direct contact with the spindle.

Applicant points out that Vandermeulen fails to disclose a seal, however, the flange 43' is used as that, as pointed out by Applicant in the arguments, that the flange is used to prevent grass clippings from entering the bearing.

Regarding Applicant's arguments that the seal of Scag is not made of one-piece, the two main parts of the seal, 75 and 80, are connected at groove 81 to form one part. The claims do not specify that the seal is integrally manufactured, as Applicant is arguing.

Conclusion

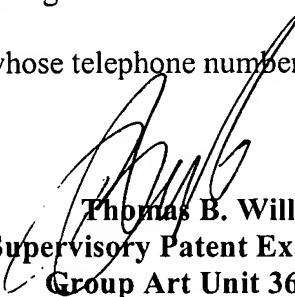
8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Torres whose telephone number is 571-272-6997. The examiner can normally be reached Monday through Thursday from 7:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will, can be reached at 571-272-6998.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-1113. The fax number for this Group is 703-872-9306.


Thomas B. Will
Supervisory Patent Examiner
Group Art Unit 3671

AMT April 28, 2005